

Claims

[c1] A method for providing search and reference functions for a messaging system, comprising:
receiving a request to search a data archive for reference information relating to at least one keyword selected by a messaging system user, said messaging system user actively engaged in composing a message or a response to a message, and wherein further, said at least one keyword is selected from a body of said message's text;
searching said data archive; and
if a reference is found, presenting said reference to said messaging system user within said message;
wherein said data archive includes information gathered from said messaging system user's message folder and at least one of:
a local data storage system; and
a shared online repository.

[c2] The method of claim 1, further comprising:
in response to a request by said messaging system user, providing access to a recipient of said message to said shared online repository operable for allowing said recipient to:

search for a reference within said shared online repository; and
access references provided in said message.

- [c3] The method of claim 1, wherein said at least one keyword is selected by highlighting a portion of text contained in said body of said message's text.
- [c4] The method of claim 1, wherein said reference is provided to said messaging system user in the form of at least one of:
 - a hypertext link;
 - a Uniform Resource Locator;
 - a web address;
 - a document;
 - a report; and
 - a memo.
- [c5] The method of claim 1, wherein contents of said reference is pasted into said message in response to prompting said messaging system user to select all or a portion of said reference.
- [c6] The method of claim 1, wherein said data archive is generated by:
 - locating available information sources associated with said messaging system user;

indexing archived data obtained from said available system sources; and
locating at least one shared online repository in response to a request by said messaging system user to share information.

- [c7] The method of claim 1, further comprising deploying process software for providing said search and reference functions for a messaging system, said deploying comprising:
 - installing said process software on at least one server;
 - identifying server addresses for users accessing said process software on said at least one server;
 - installing a proxy server if needed;
 - sending said process software to said at least one server and copying said process software to a file system of said at least one server;
 - sending the process software to at least a first client computer; and
 - executing said process software on said first client computer.
- [c8] The method of claim 7, wherein said installing said process software further comprises:
 - determining if programs will reside on said at least one server when said process software is executed;
 - identifying said at least one server that will execute said

process software; and
transferring said process software to storage for said at
least one server.

- [c9] The method of claim 7, wherein said sending said process software to said first client computer further includes having said at least one server automatically copy said process software to said first client computer, and running an installation program at said first client computer to install said process software on said first client computer.
- [c10] The method of claim 7, wherein said sending said process software to said first client computer further comprises identifying a user and an address of said first client computer.
- [c11] The method of claim 7, wherein said sending said process software to said first client computer includes sending said process software to at least one directory on said first client computer.
- [c12] The method of claim 7, wherein said sending said process software to said first client computer includes sending said process software to said first client computer via e-mail.
- [c13] The method of claim 1, further comprising integrating

process software for providing said search and reference functions for a messaging system, said integrating comprising:

determining if said process software will execute on at least one server;

identifying an address of said at least one server;

checking said at least one server for operating systems, applications, and version numbers for validation with said process software, and identifying any missing software applications for said at least one server that are required for integration;

updating said at least one server with respect to any operating system and application that is not validated for said process software, and providing any of said missing software applications for said at least one server required for said integration;

identifying client addresses and checking client computers for operating systems, applications, and version numbers for validation with said process software, and identifying any software applications missing from said client computers that are required for integration;

updating said client computers with respect to any operating system and application that is not validated for said process software, and providing any missing software application for said client computers required for said integration; and

installing said process software on said client computers and said at least one server.

- [c14] The method of claim 1, further comprising on-demand sharing of process software for providing said search and reference functions for a messaging system, said on demand sharing comprising:
 - creating a transaction containing unique customer identification, requested service type, and service parameters;
 - sending said transaction to at least one main server;
 - querying said at least one main server about processing capacity associated with said at least one main server to help ensure availability of adequate resources for processing of said transaction; and
 - allocating additional processing capacity when additional capacity appears needed to process said transaction, said additional processing capacity being selected from the group of additional capacities consisting of central processing unit capacity, processor memory capacity, network bandwidth capacity, and storage capacity.
- [c15] The method of claim 14, further comprising recording a plurality of usage measurements selected from the group of usage measurements consisting of network bandwidth, processor memory, storage, and central processing unit cycles.

- [c16] The method of claim 15, further comprising:
 - summing said usage measurements ;
 - acquiring at least one multiplicative value associated with said usage measurements and with unit costs; and
 - recording any such acquired multiplicative value as an on demand charge to a requesting customer.
- [c17] The method of claim 16, further comprising at least one of:
 - posting said on demand charge on a web site if requested by said requesting customer; and
 - sending said on demand charge via e-mail to said requesting customer's e-mail address.
- [c18] The method of claim 16, further comprising charging said on demand charge to said requesting customer's account if an account exists and if said requesting customer has selected a charge account payment method.
- [c19] The method of claim 1, further comprising deploying, accessing, and executing process software for providing search and reference functions for use with a messaging system, said deploying, accessing, and executing process software implemented through a virtual private network, the method further comprising:
 - determining if a virtual private network is required;

checking for remote access to said virtual private network when it is required;
if said remote access does not exist, identifying a third party provider to provide secure, encrypted connections between a private network and remote users;
identifying said remote users; and
setting up a network access server operable for downloading and installing client software on desktop computers for remote access of said virtual private network;
accessing said process software;
transporting said process software to at least one remote user's desktop computer; and
executing said process software on said at least one remote user's desktop computer.

[c20] The method of claim 19, further comprising:
determining if said virtual private network has a site-to-site configuration for providing site-to-site access, and if said virtual private network is not so available, installing equipment required to establish a site-to-site configuration for said virtual private network;
installing large scale encryption into said site-to-site virtual private network; and
accessing said process software through said site-to-site configuration with large scale encryption.

- [c21] The method of claim 20, wherein said accessing said process software further comprises at least one of: dialing into said network access server, and attaching directly via a modem into said network access server, said modem being selected from the group of modems consisting of telephone dial-up modems, cable modems, DSL modems, and wireless modems.
- [c22] A storage medium encoded with machine-readable computer program code for providing search and reference functions for a messaging system, the storage medium including instructions for causing a computer to implement a method, comprising:
 - receiving a request to search a data archive for reference information relating to at least one keyword selected by a messaging system user, said messaging system user actively engaged in composing a message or a response to a message, and wherein further, said at least one keyword is selected from a body of said message's text;
 - searching said data archive; and
 - if a reference is found, presenting said reference to said messaging system user within said message;
 - wherein said data archive includes information gathered from said messaging system user's message folder and at least one of:
 - a local data storage system; and

a shared online repository.

- [c23] The storage medium of claim 22, further comprising instructions for causing said computer to implement:
 - in response to a request by said messaging system user, providing access to a recipient of said message to said shared online repository operable for allowing said recipient to:
 - search for a reference within said shared online repository; and
 - access references provided in said message.
- [c24] The storage medium of claim 22, wherein said at least one keyword is selected by highlighting a portion of text contained in said body of said message's text.
- [c25] The storage medium of claim 22, wherein said reference is provided to said messaging system user in the form of at least one of:
 - a hypertext link;
 - a Uniform Resource Locator;
 - a web address;
 - a document;
 - a report; and
 - a memo.
- [c26] The storage medium of claim 22, wherein contents of

said reference is pasted into said message in response to prompting said messaging system user to select all or a portion of said reference.

- [c27] The storage medium of claim 22, wherein said data archive is generated by:
 - locating available information sources associated with said messaging system user;
 - indexing archived data obtained from said available system sources; and
 - locating at least one shared online repository in response to a request by said messaging system user to share information.
- [c28] The storage medium of claim 22, further comprising instructions for causing said computer to implement:
 - deploying process software for providing said search and reference functions for a messaging system, said deploying process software further comprising:
 - installing said process software on at least one server;
 - identifying server addresses for users accessing said process software on said at least one server;
 - installing a proxy server if needed;
 - sending said process software to said at least one server and copying said process software to a file system of said at least one server;
 - sending the process software to at least a first client

computer; and
executing said process software on said first client computer.

- [c29] The storage medium of claim 28, wherein said installing said process software further comprises:
determining if programs will reside on said at least one server when said process software is executed;
identifying said at least one server that will execute said process software; and
transferring said process software to storage for said at least one server.
- [c30] The storage medium of claim 28, wherein said sending said process software to said first client computer further includes having said at least one server automatically copy said process software to said first client computer, and running an installation program at said first client computer to install said process software on said first client computer.
- [c31] The storage medium of claim 28, wherein said sending said process software to said first client computer further comprises identifying a user and an address of said first client computer.
- [c32] The storage medium of claim 28, wherein said sending

said process software to said first client computer includes sending said process software to at least one directory on said first client computer.

- [c33] The storage medium of claim 28, wherein said sending said process software to said first client computer includes sending said process software to said first client computer via e-mail.
- [c34] The storage medium of claim 22, further comprising instructions for causing said computer to implement:
 - integrating process software for providing said search and reference functions for a messaging system, said integrating process software further comprising:
 - determining if said process software will execute on at least one server;
 - identifying an address of said at least one server;
 - checking said at least one server for operating systems, applications, and version numbers for validation with said process software, and identifying any missing software applications for said at least one server that are required for integration;
 - updating said at least one server with respect to any operating system and application that is not validated for said process software, and providing any of said missing software applications for said at least one server required for said integration;

identifying client addresses and checking client computers for operating systems, applications, and version numbers for validation with said process software, and identifying any software applications missing from said client computers that are required for integration; updating said client computers with respect to any operating system and application that is not validated for said process software, and providing any missing software application for said client computers required for said integration; and installing said process software on said client computers and said at least one server.

- [c35] The storage medium of claim 22, further comprising instructions for causing said computer to implement:
on-demand sharing of process software for providing said search and reference functions for a messaging system, said on demand sharing further comprising:
creating a transaction containing unique customer identification, requested service type, and service parameters;
sending said transaction to at least one main server;
querying said at least one main server about processing capacity associated with said at least one main server to help ensure availability of adequate resources for processing of said transaction; and

allocating additional processing capacity when additional capacity appears needed to process said transaction, said additional processing capacity being selected from the group of additional capacities consisting of central processing unit capacity, processor memory capacity, network bandwidth capacity, and storage capacity.

- [c36] The storage medium of claim 35, further comprising instructions for causing said computer to implement: recording a plurality of usage measurements selected from the group of usage measurements consisting of network bandwidth, processor memory, storage, and central processing unit cycles.
- [c37] The storage medium of claim 36, further comprising instructions for causing said computer to implement: summing said usage measurements; acquiring at least one multiplicative value associated with said usage measurements and with unit costs; and recording any such acquired multiplicative value as an on demand charge to a requesting customer.
- [c38] The storage medium of claim 37, further comprising instructions for causing said computer to implement at least one of:
 - posting said on demand charge on a web site if requested by said requesting customer; and

sending said on demand charge via e-mail to said requesting customer's e-mail address.

- [c39] The storage medium of claim 37, further comprising instructions for causing said computer to implement: charging said on demand charge to said requesting customer's account if an account exists and if said requesting customer has selected a charge account payment method.
- [c40] The storage medium of claim 22, further comprising instructions for causing said computer to implement: deploying, accessing, and executing process software for providing search and reference functions for use with a messaging system, said deploying, accessing, and executing process software implemented through a virtual private network; wherein said deploying, accessing, and executing process software further comprises: determining if a virtual private network is required; checking for remote access to said virtual private network when it is required; if said remote access does not exist, identifying a third party provider to provide secure, encrypted connections between a private network and remote users; identifying said remote users; and setting up a network access server operable for down-

loading and installing client software on desktop computers for remote access of said virtual private network; accessing said process software; transporting said process software to at least one remote user's desktop computer; and executing said process software on said at least one remote user's desktop computer.

- [c41] The storage medium of claim 40, further comprising instructions for causing said computer to implement:
 - determining if said virtual private network has a site-to-site configuration for providing site-to-site access, and if said virtual private network is not so available, installing equipment required to establish a site-to-site configuration for said virtual private network;
 - installing large scale encryption into said site-to-site virtual private network; and
 - accessing said process software through said site-to-site configuration with large scale encryption.
- [c42] The storage medium of claim 41, wherein said accessing said process software further comprises at least one of:
 - dialing into said network access server, and
 - attaching directly via a modem into said network access server, said modem being selected from the group of modems consisting of telephone dial-up modems, cable modems, DSL modems, and wireless modems.

[c43] A system for providing search and reference functions for a messaging system, comprising:

 a client system executing a messaging program, said client system including a web browser, local data storage system, and access to an Internet network;

 a search and reference application executing on said client system;

 a message with text entered by a client system user via said client system;

 a link to a shared online repository external to said client system;

 wherein said search and reference application performs:

 searching a data archive for reference information relating to at least one keyword selected by said client system user, said client system user actively engaged in composing said message or a response to said message, and wherein further, said at least one keyword is selected from a body of text contained in said message;

 and

 if a reference is found, presenting said reference to said client system user within said message;

 wherein said data archive includes information gathered from at least one of:

 said client system user's local data storage system; and

 a said shared online repository.

[c44] The system of claim 43, wherein said shared online repository includes an access control list operable for granting and denying access to users of different network systems, said access allowing authorized users of said different network systems to perform at least one of:

searching for a reference contained in said shared online repository based upon at least one new keyword selected by said authorized users; and

access references transmitted in said message;

wherein further said authorized users refer to recipients of said message for which said shared online repository is desired.

[c45] The system of claim 43, wherein said local data storage includes a message folder and at least one of:

a hard drive;

a floppy disk drive;

a CD-ROM or CD-RW drive; and

a network drive.

[c46] The system of claim 45, wherein data gathered from said local data storage includes at least one of:

text files;

spreadsheets;

graphical data; and

electronic presentations.

- [c47] The system of claim 45, wherein said network drive includes at least one of:
 - a local area network;
 - an Extranet network; and
 - a virtual private network.